

Fig. 1

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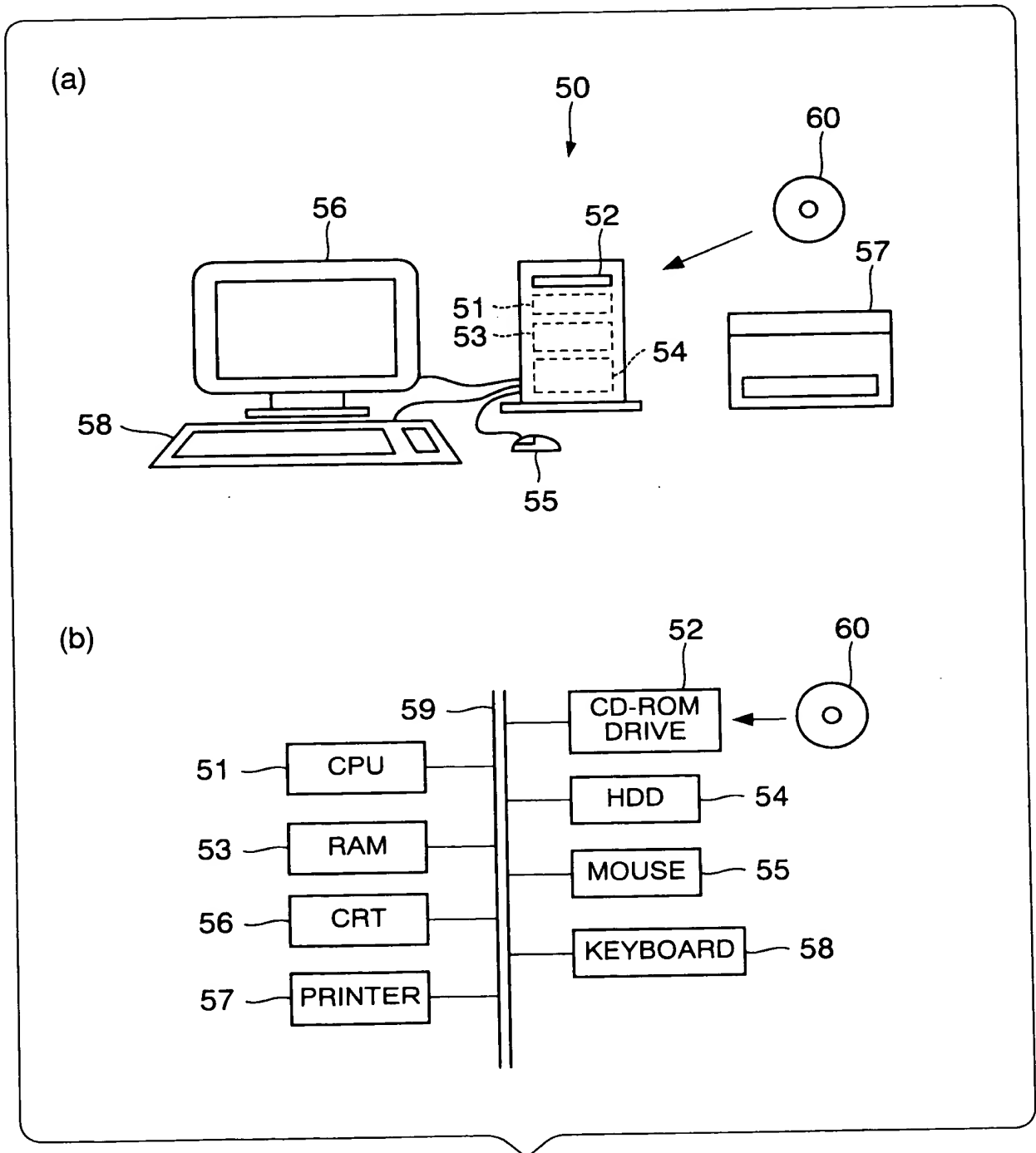


Fig. 2

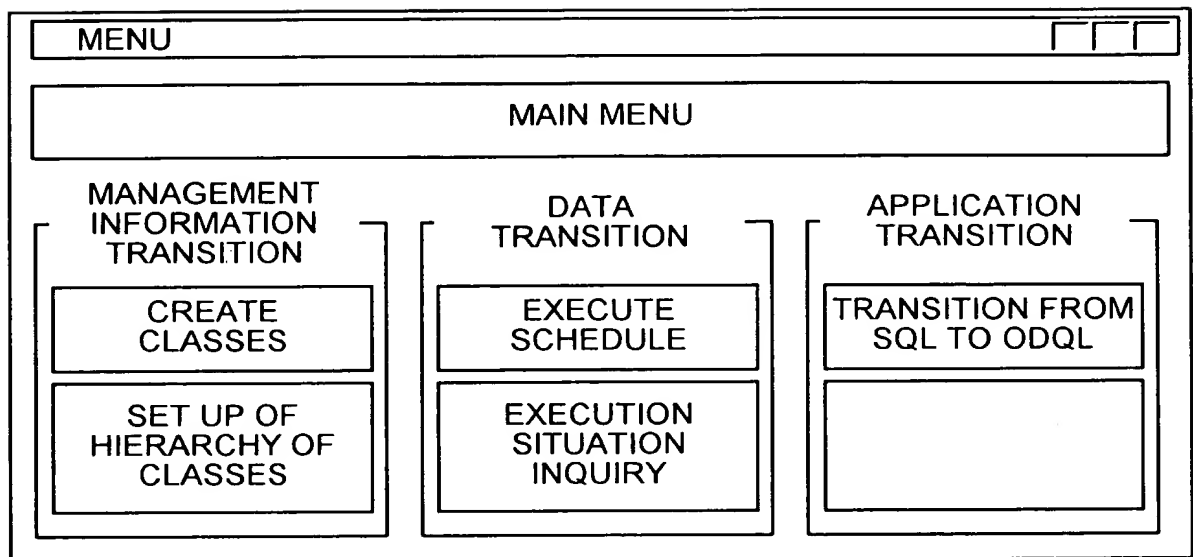


Fig. 3

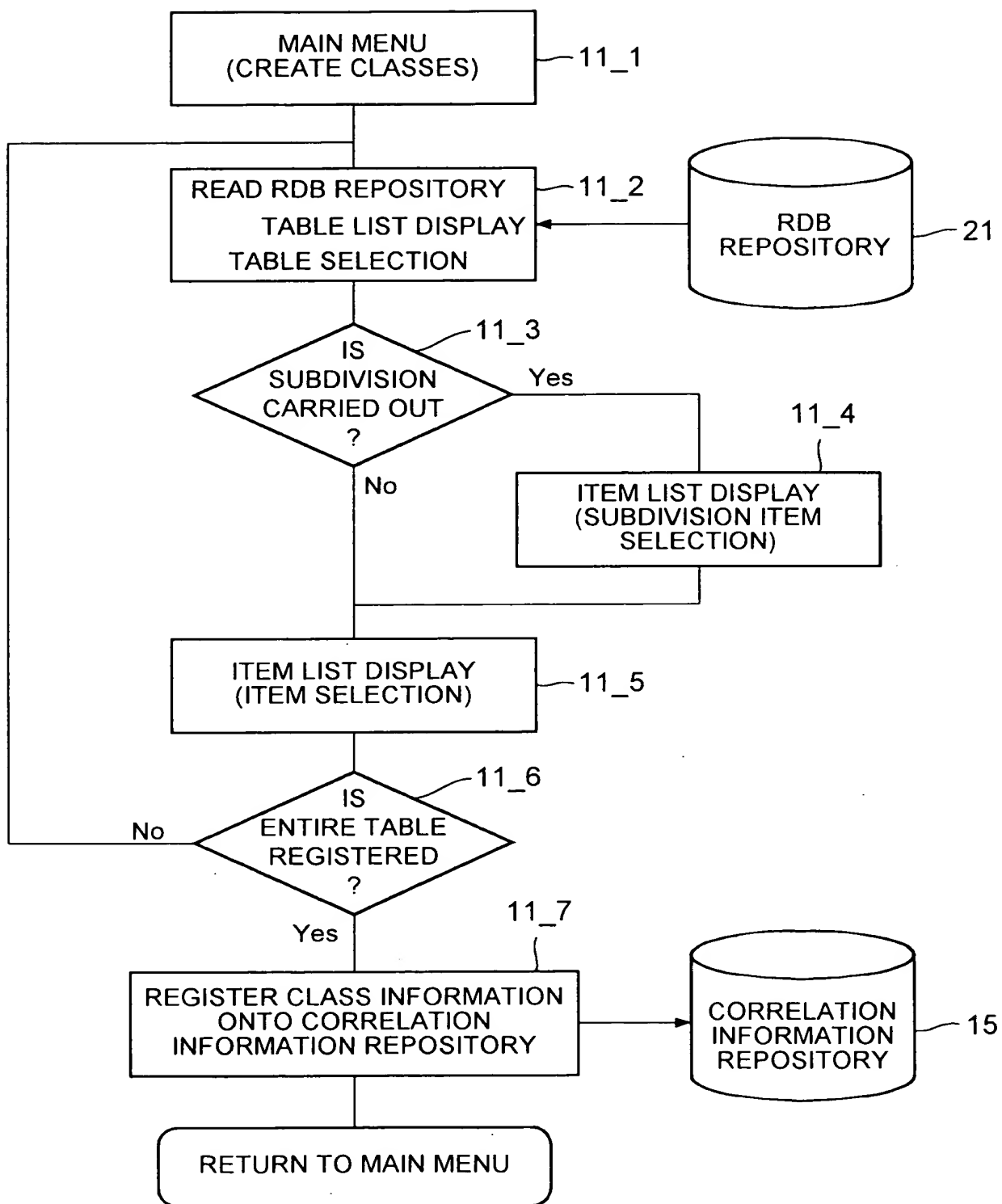


Fig. 4

TABLE LIST

TABLES

MAKER
COUNTRY
PREFECTURE
BEVERAGE

ATTRIBUTES

	ITEM NAMES	DIGITS	TYPES
1	MAKER CODE	3	INT
2	MAKER NAME	30	CHAR
3	MAIL NUMBER	8	CHAR
4	ADDRESS	50	CHAR
5	TEL	13	CHAR
6	FAX	13	CHAR
7			
8			
9			
10			

MENU

NEXT SCREEN

Fig. 5

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SET UP OF CLASS

TABLES		ATTRIBUTES OF MAKER			
	CLASSIFICATION		ITEM NAMES	DIGITS	TYPES
1	MAKER	1	MAKER CODE	3	INT.
2		2	MAKER NAME	30	CHAR
3		3	MAIL NUMBER	8	CHAR
4		4	ADDRESS	50	CHAR
5		5	TEL	13	CHAR
6		6	FAX	13	CHAR
7		7			
8		8			
9		9			
10		10			

CLASSES CREATED		ATTRIBUTES			
			ITEM NAMES	DIGITS	TYPES
		1			
		2			
		3			
		4			
		5			
		6			
		7			
		8			
		9			
		10			

PREVIOUS SCREEN COMPLETION

Fig. 6

SUBDIVISION OF TABLES

TABLER

MAKER

COUNTRY

PREFECTURE

BEVERAGE

BEVERAGE

	ITEM NAMES	DIGITS	TYPES
1	NAME	50	CHAR
2	LARGE CLASSIFICATION	20	CHAR
3	MIDDLE CLASSIFICATION	20	CHAR
4	SMALL CLASSIFICATION	20	CHAR
5	AGE BRACKET	20	CHAR
6	PRICE	10	FLOAT
7	MAKER CODE	3	INT
8	DEGREE	3	INT
9	CLASS	3	INT
10	PREFECTURE CODE	2	INT

PREVIOUS SCREEN

NEXT SCREEN

Fig. 7

SET UP CLASS

CONTENTS OF MIDDLE CLASSIFICATION

1	SAKE
2	BEER
3	NATURAL WATER
4	PROCESSED WATER
5	SHOCHU
6	
7	
8	
9	
10	

ATTRIBUTES OF BEVERAGES

	ITEM NAMES	DIGITS	TYPES
5	AGE BRACKET	20	CHAR
6	PRICE	10	FLOAT
7	MAKER CODE	3	INT
8	DEGREE	3	INT
9	CLASS	3	INT
10	PREFECTURE CODE	2	INT
11	MALT	3	INT
12	COUNTRY CODE	3	INT
13	PRODUCING CENTER	30	CHAR
14	INGREDIENT	30	CHAR

CLASSES ALREADY CREATED

CLASSES

MAKER

COUNTRY

PREFECTURE

ATTRIBUTES

	ITEM NAMES	DIGITS	TYPES
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			

PREVIOUS SCREEN

COMPLETION

Fig. 8

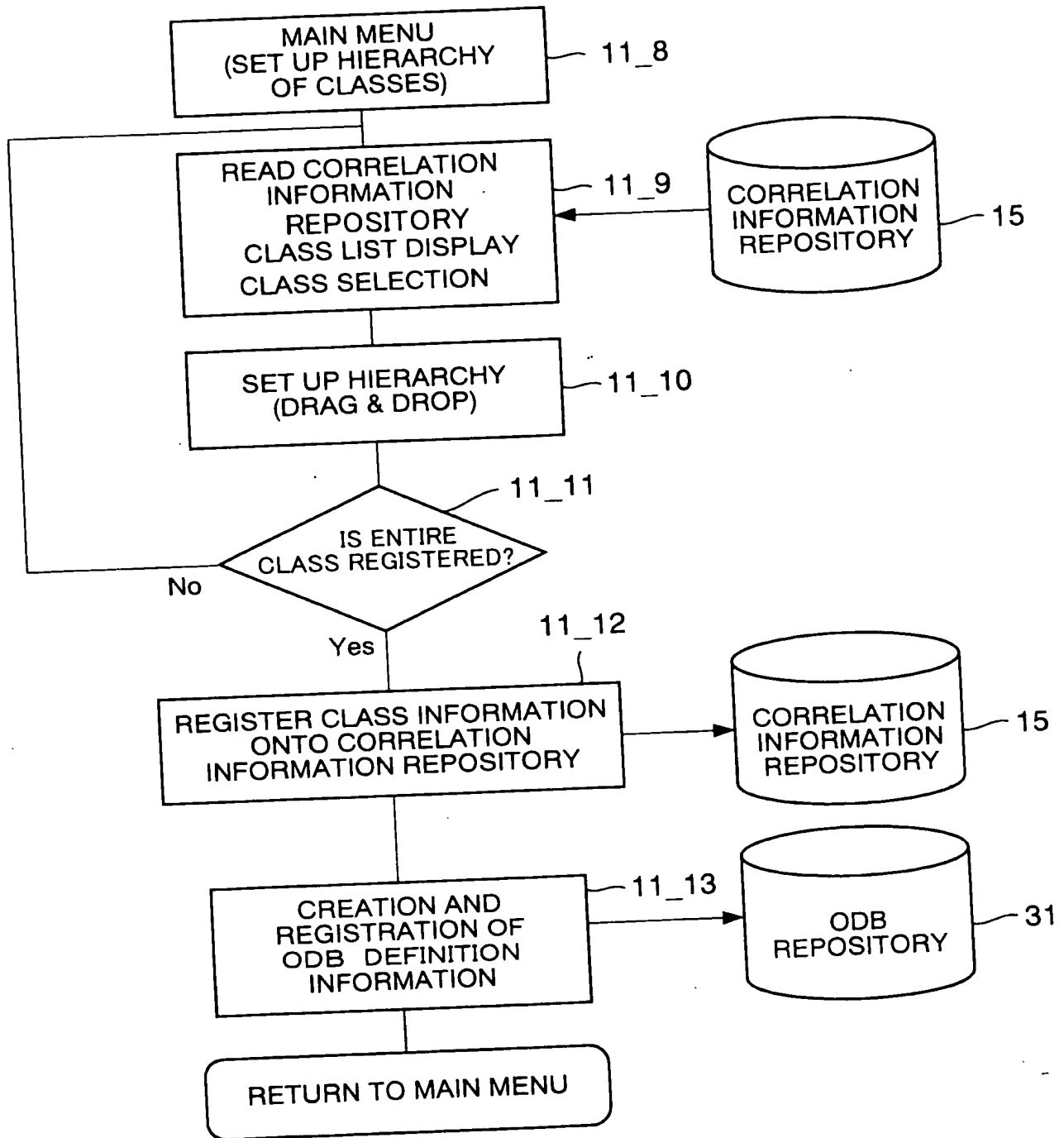


Fig. 9

HIERARCHICAL CLASSIFIED DESIGN

CLASSES CREATED

CLASSES
..... MAKER
..... COUNTRY
..... PREFECTURE
..... BEVERAGE
..... ALCOHOL
..... SOFT DRINKS
..... SAKE
..... BEER
..... NATURAL WATER
..... PROCESSED WATER
..... SHOCHU

CLASS HIERARCHY

MENU

COMPLETION

Fig. 10

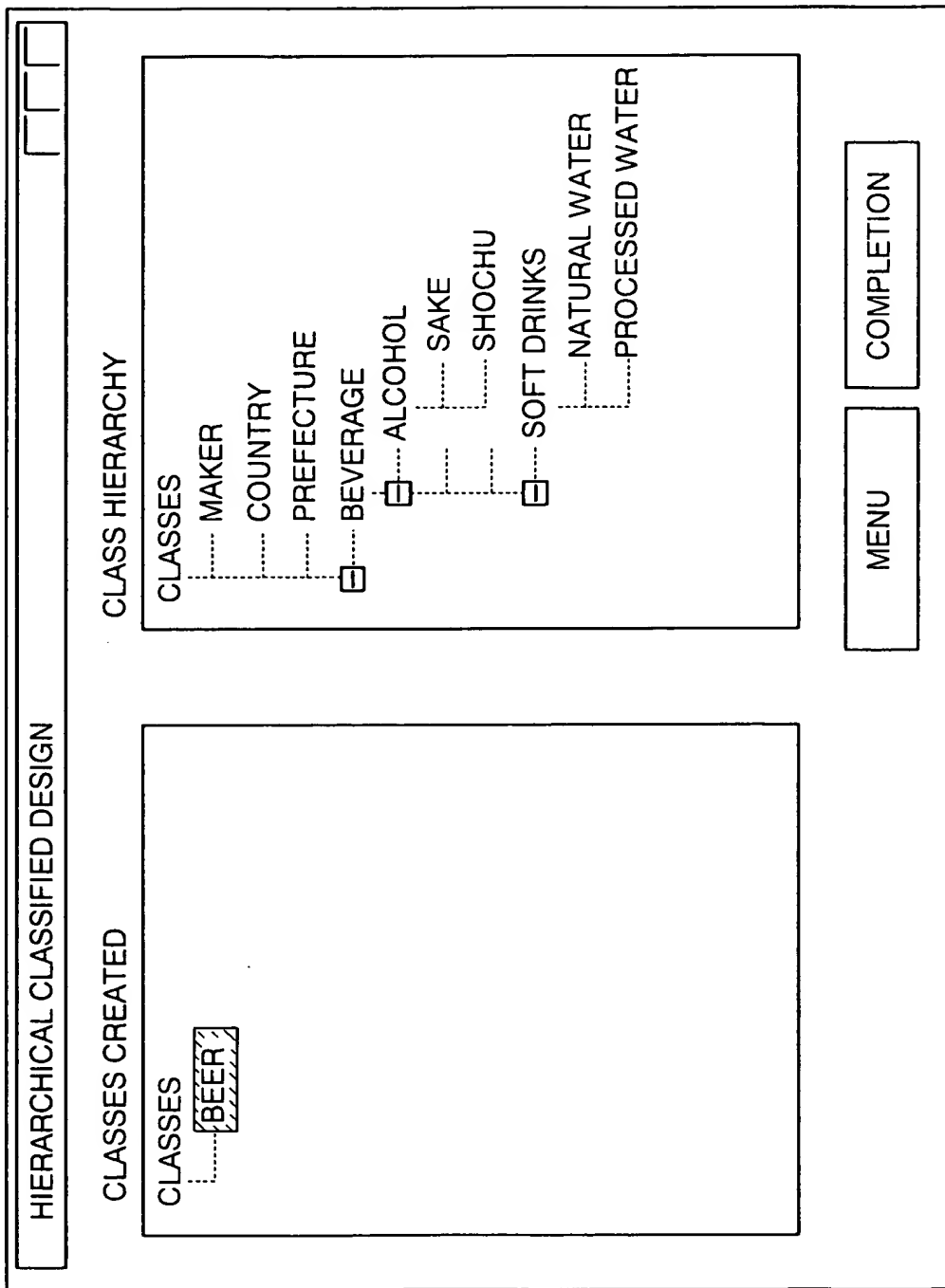


Fig. 11

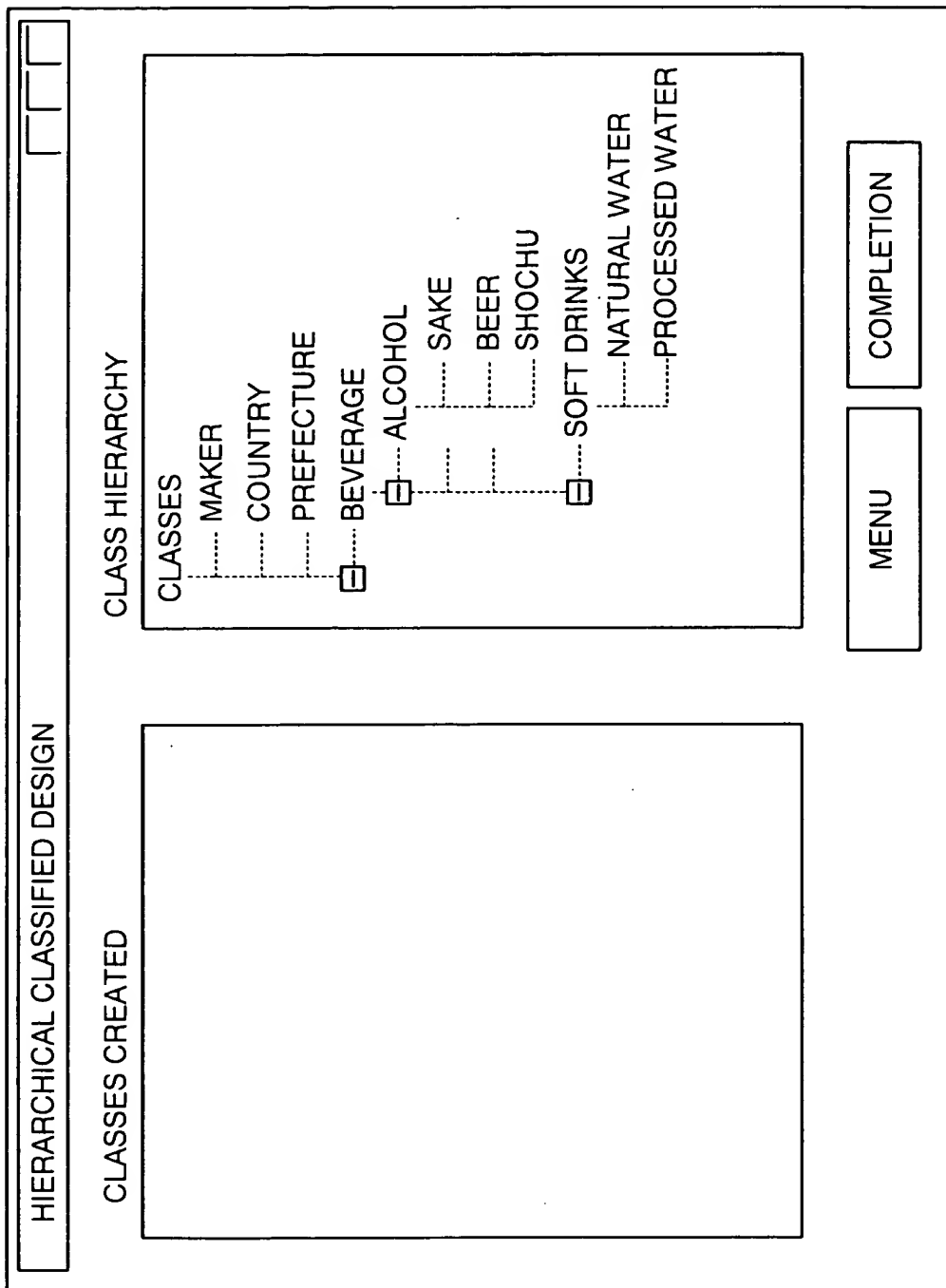


Fig. 12

DATABASE NAMES	CLASS NAMES	TABLE NAMES	ATTRIBUTES NAMES	ITEM NAMES
CLASS	MAKER	MAKER	MAKER CODE	MAKER CODE
CLASS	MAKER	MAKER	MAKER NAME	MAKER NAME
CLASS	MAKER	MAKER	ADDRESS	ADDRESS
CLASS	BEER	BEVERAGE	MALT	MALT
CLASS	BEER	BEVERAGE	COUNTRY CODE	COUNTRY CODE

INDEXES	HIERARCHY	SUBDIVISION CONDITIONS
YES	1	
NO	1	
NO	1	
NO	3-1-2	MIDDLE CLASSIFICATIONS='BEER'
YES	3-1-2	MIDDLE CLASSIFICATIONS='BEER'

Fig. 13

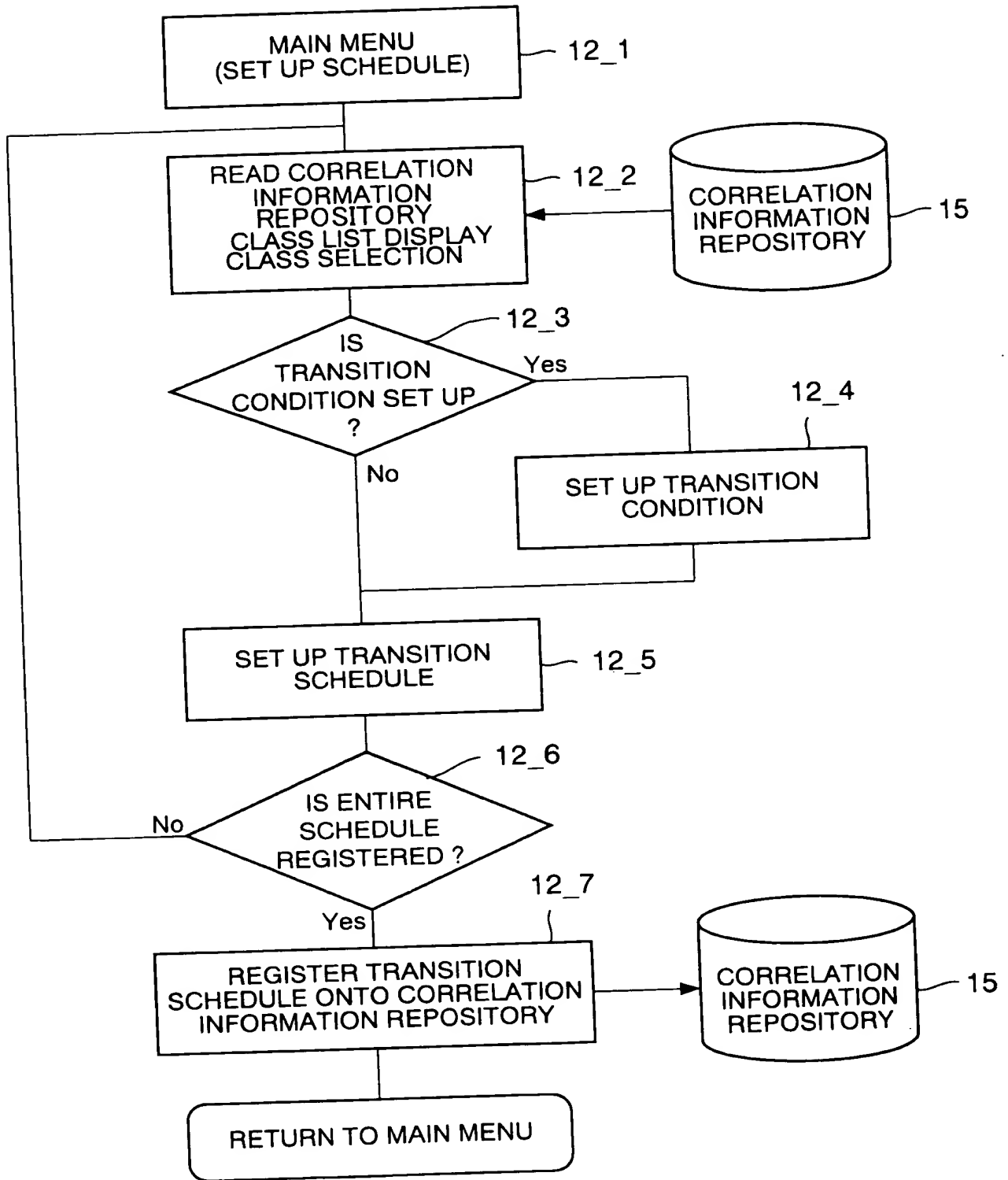


Fig. 14

TRANSITION SCHEDULE SET UP	
CLASS AS TRANSITION OBJECT <input type="text" value="BEER"/>	
TRANSITION REQUEST PREARRANGED DATA	TRANSITION REQUEST PREARRANGED TIME
<input type="text" value="1998"/> YEAR <input type="text" value="12"/> MONTH <input type="text" value="25"/> DATE	<input type="text" value="21"/> TIME <input type="text" value="00"/> MINUTE
<p>— RECIPE FOR ERRORS DURING EXECUTION OF SCHEDULE —</p> <div><p><input checked="" type="radio"/> <u>TERMINATE IT, AND EXECUTE SUBSEQUENT SCHEDULES</u></p><p><input type="radio"/> TERMINATE IT, AND SLAND BY SUBSEQUENT SCHEDULES</p><p><input type="radio"/> CONTINUE FORCIBLY</p></div>	
<input type="button" value="PREVIOUS
SCREEN"/>	<input type="button" value="COMPLETION"/>

Fig. 15

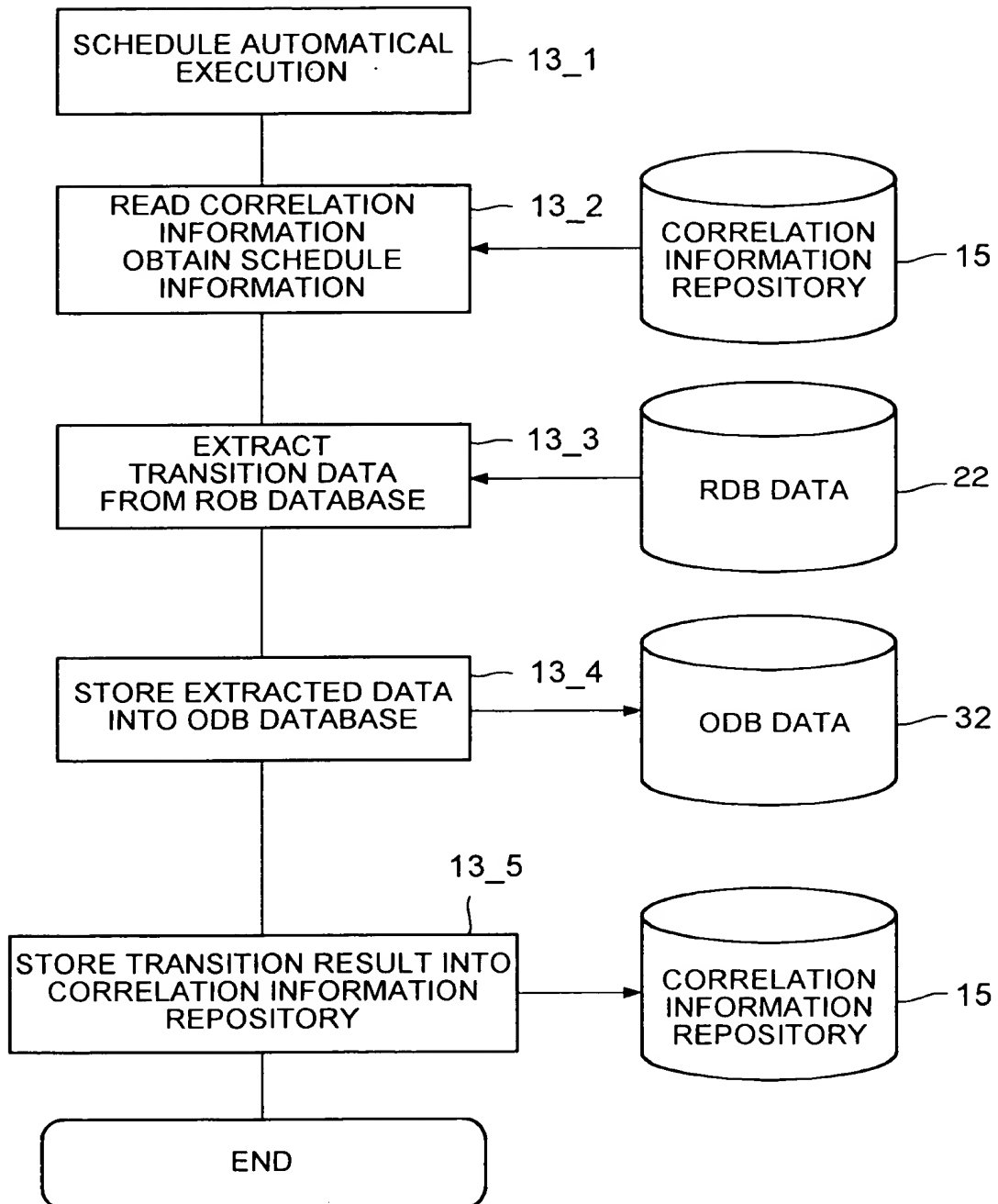


Fig. 16

SCHEDULE EXECUTION SITUATION INQUIRY						
	CLASS NAME	EXECUTION DATES	EXECUTION TIMES	STATES	RESULT INFORMATION	▲
1	COUNTRY	1998/12/25	18:00	COMPLETION	NORMAL END	
2	PREFECTURE	1998/12/25	18:30	COMPLETION	ERROR	
3	BEVERAGE	1998/12/25	19:00	IN EXECUTION		
4	ALCOHOL	1998/12/25	19:30	NOT YET EXECUTION		
5	SOFT DRINKS	1998/12/25	20:00	NOT YET EXECUTION		
6	SAKE	1998/12/25	20:30	NOT YET EXECUTION		
7	BEER	1998/12/25	21:00	NOT YET EXECUTION		
8	NATURAL WATER	1998/12/25	21:30	NOT YET EXECUTION		
9	PROCESSED WATER	1998/12/25	22:00	NOT YET EXECUTION		
10	SHOCHU	1998/12/25	22:30	NOT YET EXECUTION		
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						▼

MENU

Fig. 17

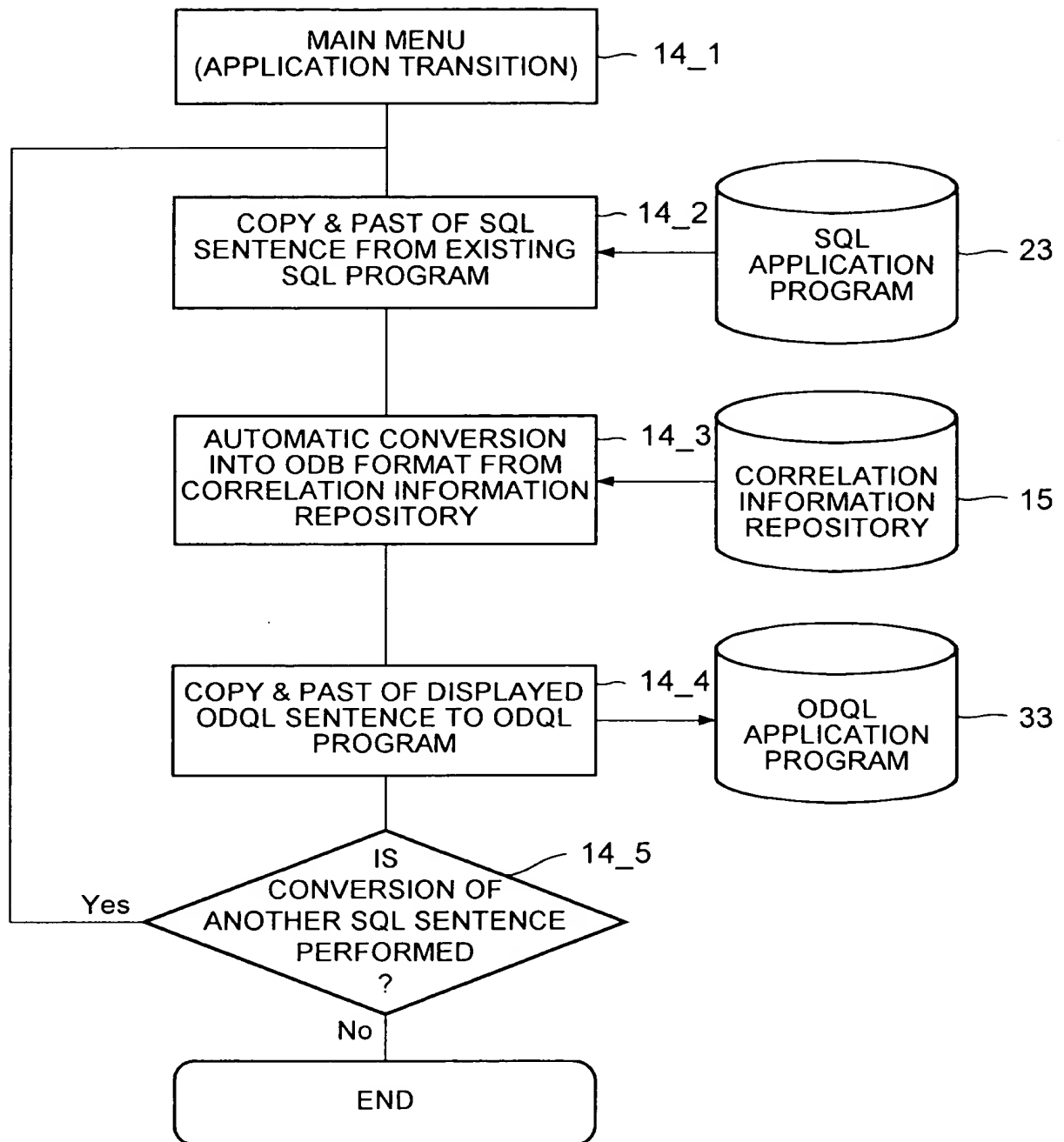


Fig. 18

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TRANSITION FROM SQL TO ODQL

SQL SENTENCE

MENU

CONVERSION

Fig. 19

TRANSITION FROM SQL TO ODQL

SQL SENTENCE

```
SELECT MAKER NAME, TEL  
FROM MAKER  
WHERE MAKER CODE=130
```

MENU CONVERSION

Fig. 20

TRANSITION FROM SQL TO ODQL

ODQL SENTENCE

```
[ MAKER, MAKER NAME, MAKER, TEL ]  
FROM MAKER  
WHERE MAKER, MAKER CODE=130
```

MENU CONVERSION

Fig. 21

(a)

MAKER CODES	MAKER NAMES	HEAD OFFICES	FOUNDING YEARS	ANNUAL SALES
001	KARYN	TOKYO-TO	1930	1200 HUNDRED MILLION
002	YONTORY	OSAKA-FU	1915	860 HUNDRED MILLION
003	YUHI	TOKYO-TO	1996	1130 HUNDRED MILLION
004	HAODATE	TOKYO-TO	1967	680 HUNDRED MILLION
005	COCA-COLA	AICHI-KEN	1980	2300 HUNDRED MILLION

(b)

BEVERAGE	NAME	LARGE CLASSIFICATIONS	MIDDLE CLASSIFICATIONS	SMALL CLASSIFICATIONS	AGE BRACKETS	PRICES	MAKER CODE
	KARYN TANREI	ALCOHOL	BEER	BOTTLE	30'S	300	001
	KOKEN NO IWASHIMIZU	SOFT DRINKS	NATURAL WATER	CAN	10'S	120	012
	MIZUMIZUSHII MIZU	SOFT DRINKS	PROCESSED WATER	PET BOTTLE	20'S	150	004
	RAKER	ALCOHOL	BEER	CAN	20'S	220	001
	ETSU NO KANBAI	ALCOHOL	SAKE	BOTTLE	40'S	1300	002

DEGREES	CLASSES	PREFECTURE CODE	MOLTS	COUNTRY CODE
20			15%	002
		003		
		007		003
10			20%	
35	1	010		

Fig. 22

CLASSES

MAKER

MAKER CODE
MAKER NAME
HEAD OFFICE
FOUNDING YEAR
ANNUAL SALES

001
KARYN
TOKYO-TO...
1930
1200
HUNDRED
MILLION

002
YONTORY
OSAKA-FU...
1915
860
HUNDRED
MILLION

BEVERAGES

NAME
AGE BRACKET
PRICE
MAKER CODE
SMALL CLASSESFIATION

KARYN TANREI

30'S
300
001
BOTTLE

20

15%
002

ETSU NO
KANBAI
40'S
1300
002
BOTTLE

ALCOHOL

DEGREE
BEER
MOLT
COUNTRY
CODE
SAKE
CLASS
PREFECTURE CODE

20

1
010

SOFT DORINKS

PREFECTURE CODE
NATURAL WATER

Fig. 23

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